

CLAIMS

1. A pneumatic actuator comprising a cylinder, an output shaft disposed rotatably in said cylinder, a pinion disposed in said output shaft, a piston rod furnished with rack teeth to be meshed with said pinion, and pistons disposed one each at opposite ends of said piston rod, wherein the pneumatic actuator further comprises a pressure-inspecting chamber enclosed with said cylinder and said piston and a pressure-detecting hole establishing communication between said pressure inspecting chamber and an exterior.
2. A pneumatic actuator according to claim 1, wherein the pressure-inspecting chamber or the pressure-detecting hole is provided therein with a pressure sensor for detecting an inner pressure of said pressure-inspecting chamber.
3. A pneumatic actuator comprising a cylinder, an output shaft disposed rotatably in said cylinder, a pinion disposed in said output shaft, a piston rod furnished with rack teeth to be meshed with said pinion, and pistons disposed one each at opposite ends of said piston rod, wherein the pneumatic actuator satisfies  $0.2D < e < 0.35D$ , in which D stands for an inside diameter of said cylinder and e stands for a distance between a center line of said piston and a center line of said pinion, to establish conformity between the center line of the piston and a pitch line of the rack teeth.
4. A pneumatic actuator comprising a cylinder, an output shaft disposed rotatably in said cylinder, a pinion disposed in said output shaft, a piston rod furnished with rack teeth to be meshed with said pinion, and pistons disposed one each at opposite ends of said piston rod, wherein the pneumatic actuator further comprises ribs disposed one each above and below the rack teeth of the piston rod and has end parts of the ribs caused to collide against an outer periphery of the output shaft.
5. A pneumatic actuator according to claim 4, wherein the rib above the rack teeth is furnished with an opening part for allowing visual inspection of the rack teeth.

6. A single operation pneumatic actuator possessing a spring and comprising a cylinder, an output shaft disposed rotatably in said cylinder, a pinion disposed in said output shaft, a piston rod furnished with rack teeth to be meshed with said pinion, and pistons disposed one each at opposite ends of said piston rod, wherein the pneumatic actuator further comprises a spring retainer for compressing the spring, which spring retainer is provided with a retainer guide that freely guides the spring retainer, and a stopper bolt inserted into the retaining guide.

7. A pneumatic actuator according to claim 6, wherein said retainer guide is formed in a cylindrical shape.

8. A single operation pneumatic actuator possessing a spring and comprising a cylinder, an output shaft disposed rotatably in said cylinder, a pinion disposed in said output shaft, a piston rod furnished with rack teeth to be meshed with said pinion, and pistons disposed one each at opposite ends of said piston rod, wherein the pneumatic actuator further comprises a cylindrical spring case for containing the spring, which case is provided on an outer peripheral face thereof with an air vent.

9. A single operation pneumatic actuator according to claim 8, wherein the cylindrical spring case is provided with a flange part lateral face on which projected is a blocking part for blocking an end part of a communicating hole establishing communication between a pressure feeding and releasing port and a pressure feeding and releasing chamber of a main body of the actuator, and the communicating hole is juxtaposed to the blocking part.

10. A single operation pneumatic actuator according to claim 8 or claim 9, wherein said air vent has attached thereto an elbow furnished in a lower direction of the actuator with an opening part.